

Replacement Sheet

HYDRODYNAMICS CONTROL METHOD AND APPRARATUS
DETAILED DISCRIPTION OF THE PREFERRED EMBODIMENT

(Referring to the Figures)

Figure 1 and 1a show a horizontal cylindrical enclosed vessel 1 with an inlet conduit 2 on one end, oil outlet conduit 3 and water outlet conduit 4 on the opposite end. In this configuration considering a mixture of oil and water entering the vessel through the inlet conduit 2, oil will pass through an upper portion 5 of the vessel and water through a lower portion 6 of the vessel. There is a permeable barrier located in the flow path of the oil 7 and water 8. The permeability of the barrier may be discretely adjusted to establish a plug flow through the vessel of both fluids.

Figure 2 and 2a show a vertical cylindrical enclosed vessel 11 with an inlet conduit 12 near the middle of the vessel, oil outlet conduit 13 in the upper portion of the vessel and water outlet conduit 14 in the lower portion of the vessel. In this configuration considering a mixture of oil and water entering the vessel through the inlet conduit 12, oil will flow to an upper portion 15 of the vessel and water to a lower portion 16 of the vessel. There is a permeable barrier 17 located in the flow path of the inlet stream, a permeable barrier 18 located in the flow path of the oil and a permeable barrier 19 located in the path of the water. The permeable barriers can be discretely adjusted to establish a plug flow of both the oil and the water.

The permeable barriers can be of a louvered shutter construction discretely variable whereby the louvers can be opened or closed to compensate for variations in fluid flow rate, density and viscosity. If desired a mechanism 100a, 100b, 100c, 100d, 100e, 100f can be provided on the vessel exterior connected to the internal louvers to open and close the louvers.